

ABSTRACT

An injector for fuel injection systems of internal combustion engines, in particular direct-injection diesel engines, has a piezoelectric actuator (16), which is located in an injector body (10) and is held in contact with the injector body (10) on one side and with a sleeve-like booster piston (32) on the other via first spring means (34). Moreover, a nozzle body (20), which is joined to the injector body (10) and has at least one nozzle outlet opening (26, 27) and in which a stepped nozzle needle (21) is guided axially displaceably, and second spring means (28), disposed inside the booster piston (32), are provided, which - together with the injection pressure acting on the back side of the nozzle needle (21) - keep the nozzle needle (21) in the closing position. Moreover, the injector has a control chamber (42), which is embodied on the end toward the nozzle needle of the booster piston (32) and which communicates, via at least one leakage gap (43, 45, 47), with a fuel supply (18) that is at injection pressure, and the nozzle needle (21) is urged in the opening direction (35) by the fuel located in the control chamber (42).

An essential special feature is that the booster piston (32) actuated by the piezoelectric actuator (16) is spatially associated directly with the nozzle needle (21), in such a way that the nozzle needle (21) is fitted, with a rear region (30) that has a larger diameter than a region of the nozzle needle (21) toward the nozzle outlet, into the inner chamber (31) of the booster piston (32).

(Fig. 1)